# 11 Mbps Wireless LAN USB Adapter

COMPEX®

networks@work

# USER'S MANUAL

## COMPEX *iWavePort* SERIES

# WLU11A

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Manual number : U-0336-V1.1C

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Manual Revision by Christopher

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## FCC NOTICE

This device has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This device generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this device does cause harmful interference to radio or television reception, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Connect the computer into an outlet on a circuit different from that to which the receiver is connected.

Increase the separation between the computer and receiver.

Consult the dealer or an experienced radio/TV technician for help.

**Caution**: Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

**FCC Compliance Statement:** This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

This device may not cause harmful interference, and

This device must accept any interference received, including interference that may cause undesired operation.

## Declaration of Conformity

Compex, Inc. declares the following:
Product Name: Compex *iWave*Port 11Mbps Wireless LAN USB Adapter
Model No.: WLU11A conforms to the following Product Standards:
Radiated Emission Standards: EN55022A, FCC Part 15 Class B; Conducted Emission
Standards: EN60555Pt2 conducted emission; EN55022A conducted emission, FCC Part 15
Class B; Immunity Standards: IEC 801-2; IEC 801-3; IEC 801-4.
Therefore, this product is in conformity with the following regional standards:
FCC Class B - following the provisions of FCC Part 15 directive;
CE Mark - following the provisions of the EC directive.

28 December 2001

Shi Jia Xiang
R & D Manager

## Technical Support Information

The warranty information and registration form are found in the Quick Install Guide.

For technical support, you may contact COMPEX or its subsidiaries. For your convenience, you may also seek technical assistance from the local distributor, or from the authorized dealer/reseller that you have purchased this product from. For technical support by email, write to support@compex.com.sg.

Refer to the table below for the nearest Technical Support Centers:

| Technical Support Centers | |
|---|---|
| Contact the technical support center that services your location. | |
| **U.S.A., Canada, Latin America and South America** | |
| ⊠ Write | **Compex, Inc.**<br>4051 E. La Palma,  Unit A<br>Anaheim,  CA 92807,  USA |
| ☎ Call<br><br>🖳 Fax | Tel:  (714) 630-7302 (8 a.m.-5 p.m. Pacific time)<br>Tel:  (800) 279-8891 ext.122 Technical Support<br>Fax:  (714) 630-6521<br>BBS:  (714) 630-2570 (24-hour access) |
| **Europe** | |
| ⊠ Write | **ReadyLINK Networktechnology Gmbh**<br>Albert  Einstein  Straβe  34 / M21<br>63322 Rödermark,  Germany |
| ☎ Call<br>🖳 Fax | Tel:  +49 (0) 6074 - 98017 (8 a.m.-5 p.m. local time)<br>Fax:  +49 (0) 6074 - 90668<br>BBS:  +49 (0) 6074 - 93974 (24-hour access) |
| **Asia, Australia, New Zealand, Middle East and the rest of the World** | |
| ⊠ Write | **Compex Systems Pte Ltd**<br>135, Joo Seng Road #08-01,  PM Industrial Building<br>Singapore  368363 |
| ☎ Call<br><br>🖳 Fax | Tel:  (65) 286-1805 (8 a.m.-5 p.m. local time)<br>Tel:  (65) 286-2086 ext.199 Technical Support<br>Fax:  (65) 283-8337<br>BBS:  (65) 282-8854 (24-hour access) |
| *Internet access/* | E-mail:  **support@compex.com.sg**<br>FTPsite:  **ftp.compex.com.sg** |
| *Website:* | **http://www.cpx.com**  *or* **http://www.compex.com.sg** |

## About This Document

The product described in this document, Compex *iWave*Port Series, WLU11A is a licensed product of Compex Systems Pte Ltd. This document contains instructions for installing, configuring and using the WLU11A. It also gives an overview of the key applications and the networking concepts with respect to the product.

This documentation is for both Network Administrators and the end user who possesses some basic knowledge and expertise in the networking structure and protocols.

It makes a few assumptions that the host computer has already been installed with TCP/IP and already up & running and accessing the Internet. Procedures for Windows 95/98/2000/NT operating systems are included in this document. However, for other operating system, you may need to refer to your operating system's documentation for networking.

## How to Use this Document

The document is written in such a way that you as a user will find it convenient to find specific information pertaining to the product. It comprises of chapters that explain in details on the installation and configuration of WLU11A.

### Conventions

In this document, special conventions are used to help and present the information clearly. The Compex *iWave*Port 11Mbps Wireless LAN USB Adapter is often referred to as WLU11A in this document. Below is a list of conventions used throughout.

| NOTE | **NOTE**<br>This section will consist of important features or instructions |
|------|-----------------------------------------------------------------------------|

| ⚠ | **CAUTION**<br>This section concerns risk of injury, system damage or loss of data |
|---|------------------------------------------------------------------------------------|

| ⚡ | **WARNING**<br>This section concerns risk of severe injury |
|---|-------------------------------------------------------------|

| **Menu Commands, Button/Dialog Buttons,** <br> **Product Indicators** | Will appear as follows in Bold <br> Eg . Reboot System and Save <br> Eg.  MODEM 1 port or  STATUS  LED indicator. |
|---|---|

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# Chapter 1   Product Overview

## 1.1      Introduction

Wireless network is a convenience to everyone. Whether you are a home user or an office network administrator, you are going to enjoy the benefits of the wireless network.

As a home user, you can enjoy the freedom to roam around your house and maintain connection to your network. Now you can surf the web, send e-mail or download a program while in the garden or near your swimming pool. Wireless network will change the way you live. No more unsightly cables and wiring with the implementation of a wireless network.

Many new offices in consideration of fast implementation and easy maintenance of the network has upgraded/expanded to a wireless network.

## 1.2      Overview

Compex *iWave*Port WLU11A is a handy card-sized 11Mbps Wireless Adapter with USB (Universal Serial Bus) interface in compliant to IEEE 802.11b industry standard. It offers the convenience of a plug and play by just simply connecting to a USB interface of your PC or notebooks.

## 1.3      Features and Benefits

Compex WLU11A is designed to give you all the supPort features you need in a wireless network to establish a wireless client. The following features are included as part of the benefits of owning a WLU11A.

### 1.3.1      IEEE 802.11b and USB 1.1 Specifications compliant

The WLU11A can interoperate with any other wireless devices that comply with IEEE802.11b **D**irect **S**equence **S**pread **S**pectrum (DSSS) and interpretable with most notebooks and desktop computers, in compliance to USB 1.1 specifications.

### 1.3.2      Supports 1, 2, 5.5 and 11Mbps Data Rates

WLU11A works at a maximum speed of 11Mbps on the wireless interface; and is backward compatible to support older wireless products with lower speeds of 1, 2 Mbps.

### 1.3.3    Wired Equivalent Privacy (WEP) 64/128-bit data encryption

For data privacy, Compex *iWave*Port WLU11A uses a 64-bit or 128-bit private encryption key – WEP to lock your information which are transmitted over the air. Only wireless clients configured with the same WEP key will have access to the data.

### 1.4      Applications

The Compex WLU11A facilitates wireless connections to other hosts on a network.

### 1.4.1    When do you need wireless LAN

Installing the Compex WLU11A will be an advantage when you have the following situation:

•        Demanding High Mobility at your Home or Office

•        Where time is a scare source

•        Structural restriction in the building

•        Cost effectiveness against laying of cables

•        Easy scalability and expansion of existing network

### 1.4.2    Networking scenarios for WLU11A

WLU11A can be configured for 2 types of wireless architectures – Infrastructure and Ad-Hoc. In the Infrastructure architecture, all the wireless clients communicate through the access point, which is a device that acts as a base station for all wireless communication. It is the single point of all wireless communication. The data packets from the wireless clients will be transferred to the access point before transmitting to other hosts on the network.

In an Ad-Hoc architecture, the wireless clients communicate directly with one another. There is no single point of communication. No access point exists on the wireless LAN. Each wireless client transfers their data packets to the other.

Figure 1.4.2a shows an example of how you can use the WLU11A in an infrastructure architecture. The number of wireless clients support depends on the access point.
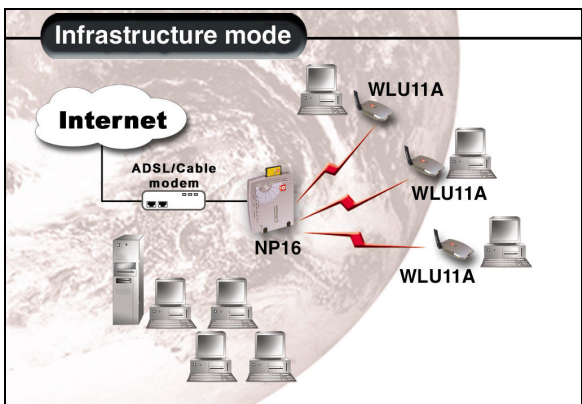


**Figure 1.4.2a Infrastructure Architecture Configuration**

Figure 1.4.2b shows an example of how a WLU11A can work in an Ad-Hoc architecture. In an Ad-Hoc architecture, there is no limit to the number of wireless clients you can connect.
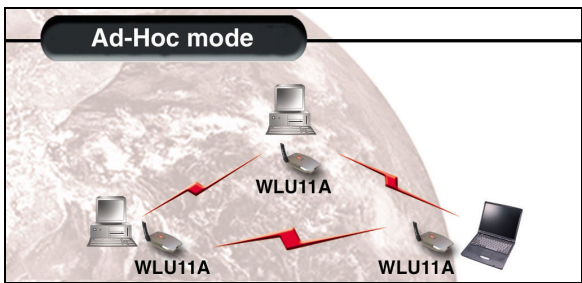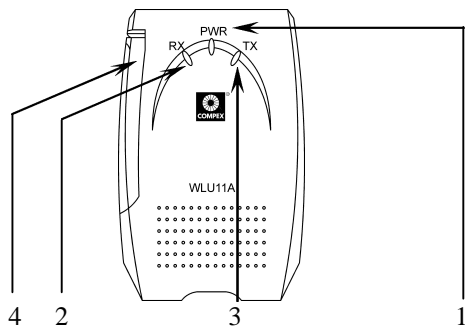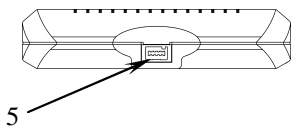


**Figure 1.4.2b Ad-Hoc Architecture Configuration**

## 1.5      Panel Views and Descriptions

### 1.5.1     Top View



**Figure 1.5.1a Top View of Compex WLU11A**

### 1.5.2     Front View



**Figure 1.5.2a Front View of Compex WLU11A**

### 1.5.3    Panel Description

| | Name | Description |
|---|---|---|
| 1 | **PWR LED** | <u>*Red*</u><br>Power is supplied to WLU11A.<br><br><u>*Off*</u><br>No power is supplied to WLU11A |
| 2 | **RX LED** | <u>*Blinking Green*</u><br>Data is receiving on the wireless interface.<br><br><u>Off</u><br>No data is received on the wireless interface. |
| 3 | **TX LED** | *Blinking Green*<br>Data is transmitting on the wireless interface.<br><br><u>*Off*</u><br>No data is transmitted on the wireless interface. |
| 4 | **Dipole Antenna** | The antenna is for RF Transmission/Receiving. |
| 5 | **USB Port** | The connection port for your USB cable. |

## 1.6      Technical Specifications

| Model | *iWave*Port WLU11A |
|---|---|
| Industry Standards | IEEE 802.11 & 802.11b DSSS<br>USB Specification v1.1<br>CE Mark, FCC Class B, Gost, C-Tick |
| Interface | One Type B USB interface |
| Radio Technology | Direct Sequence Spread Spectrum (DSSS) |
| Frequency Band | 2400 ~ 2483.5MHz (US, Canada)<br>2400 ~ 2497MHz (Europe, Japan) |
| Operating Channels | 4 Channels (France)<br>11 Channels (US & Canada)<br>13 Channels (Europe) |
| Media Access Method | Carrier Sense Multiple Access with Collision Avoidance (CSMA/CA) |
| Data Rate | 11Mbps, 5.5Mbps, 2Mbps, 1Mbps |
| Modulation | CCK, BPSK, QPSK |
| Antenna | Dipole Antenna |
| Data Privacy | 64-bit or 128-bit WEP (selectable) |
| Power Consumption | 5V, 250mA TX, 150mA RX, 30mA Standby |
| Net Weight | About 130 g |
| Dimension(L x W x H) | 101mm x 65 mm x 14 mm |
| Environmental Requirement<br>Temperature<br><br>Humidity | Operating : 0°C to 40°C<br>Storage : -20°C to 70°C<br>Operating : 10%RH to 70%RH<br>Storage : 5%RH to 90%RH |

# Chapter 2   Getting Started

This chapter outlines the basic requirement needs before you begin any installation and configuration on the Compex WLU11A.

### 2.1      Package Content

Thank you for purchasing the Compex WLU11A. The package should contains the following:

WLU11A Adapter
USB Cable
Quick Install Guide with warranty card
CD User manual and software drivers and utilities

### 2.2      Setup Considerations

• Check your Local Area Network configurations. Check if it is Dynamic or Static IP addressing.
• Check the TCP/IP protocols and IP address settings of the PCs/Clients or Ethernet Hub/Switch in your LAN.

### 2.2.1    Software requirements

• Windows 98/98SE/ME/2000/XP
• 2 MB of hard disk space

### 2.2.2    Hardware requirements

• Computers with USB port that complies with USB specification 1.1

## Chapter 3   Hardware and Software Installation

WLU11A is a Plug and Play device. You can plug into your USB port or remove it without shutting down your computer.

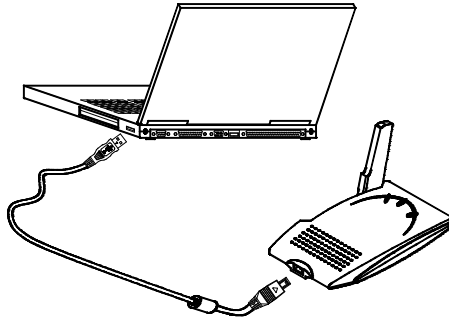### 3.1      WLU11A Hardware Installation



**Figure 3.1a WLU11A Connections**

Before you start the hardware installation, you need to have the following items ready.

• WLU11A unit
• USB cable
• Computer with USB port

To begin
1. Power up your computer and login.

2. Plug the smaller connector of the USB cable to WLU11A and the other end the cable to your computer.

3. The PWR LED will light up indicating that WLU11A is receiving power from your computer.

4. Your computer will detect the USB device and we can proceed with the software installation next.

## 3.2      WLU11A Driver Installation

This section is similar to the Quick Install Guide. The driver and client utility installations will be shown in following pages.

### 3.2.1      Windows 98/98SE/2000 WLU11A Driver Installation

1.      Once you plug WLU11A into your computer, it will detect the WLU11A hardware immediately as shown in Figure 3.2.1a. Click **Next >** to continue.



**Figure 3.2.1a USB Device detection**

| NOTE | **NOTE** |
|------|----------|
|      | If your computer does not detect the WLU11A, check that your USB driver for your operating system is working properly. You may need to install the USB driver for computer. Please refer to the troubleshooting in chapter 7. |

2.    Select **"Search for the best driver for your device (Recommended)"** in Figure 3.2.1b and then click **Next >**.



**Figure 3.2.1b Search for new drivers**

3.    Insert the CD into your computer CD-ROM drive; Select **"Specify a location:"**, enter **x:\Software\wlu11a\drivers** and click **Next >**. (See Figure 3.2.1c) Note: **x** is the drive letter for your CD-ROM drive.
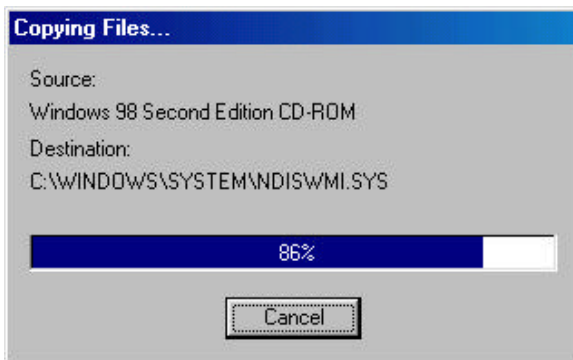


**Figure 3.2.1c Select drivers location**

4.      Click **Next >** once windows found the driver in CD drive. (See Figure 3.2.1d)



**Figure 3.2.1d Drivers confirmation**

5.      Click **Next >** to confirm and Windows will install the drivers as shown in Figure 3.2.1e.



**Figure 3.2.1e Drivers Installation**

6.        After Windows finish copying the files, click **Finish** to complete the installation. (See Figure 3.2.1f) For Windows 98/98SE/ME please reboot the system.



**Figure 3.2.1f Installation complete**

7.        Go to **My Computer**, use right mouse button and click on **Properties**. Select **Device Manager** then **Network adapters**. You will be able to find Wireless 802.11b USB Adapter if it has been successfully installed. (See Figure 3.2.1g)
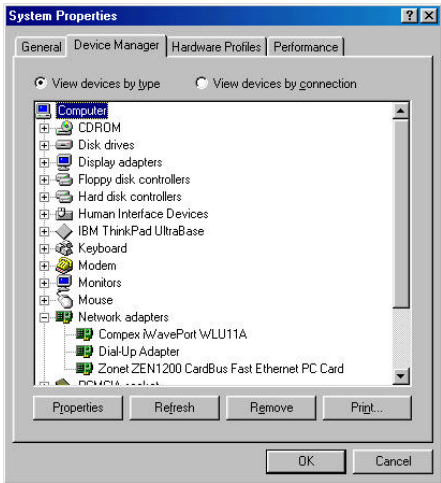


**Figure 3.2.1g Check status of WLU11A driver**

### 3.2.2    Windows XP Driver Installation Guide

1.      Power up your computer. Connect the USB male connector to your computer USB port. Your computer will detect the WLU11A hardware immediately as shown in Figure 3.2.2.a. Select "**Install from a list or specific location (Advanced)**"and click **Next >** to continue.



**Figure 3.2.2a Found new hardware**

2.      Insert the **CD** into your CD-ROM drive; Select "**Include this location in the search:**", enter **x:Software\wlu11a\drivers** and click **Next >** as shown in Figure 3.2.2b. Windows will detect the drivers for you. Click **Continue Anyway** to proceed. Note: **x** is the drive letter of your CD-ROM drive.
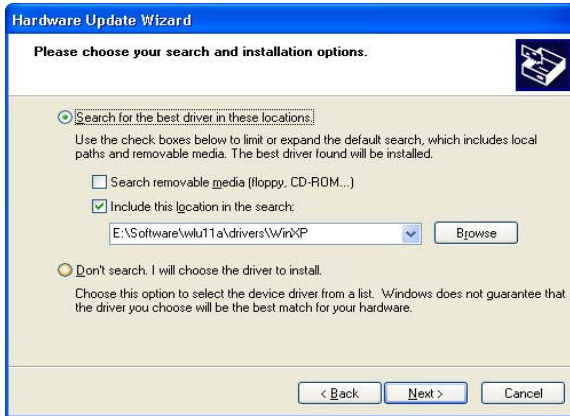


**Figure 3.2.2b Windows logo test**

3.      Windows will copy the necessary files and complete the installation when Figure 3.3.2c is shown.



**Figure 3.3.2c Installation complete**

4.   Go to My Computer, use right mouse button and click on Properties. Select Hardware and then click Device Manager. Select Network adapters. You will be able to find "**Compex iWavePort WLU11A**" if it has been successfully installed. (See Figure 3.2.2d)
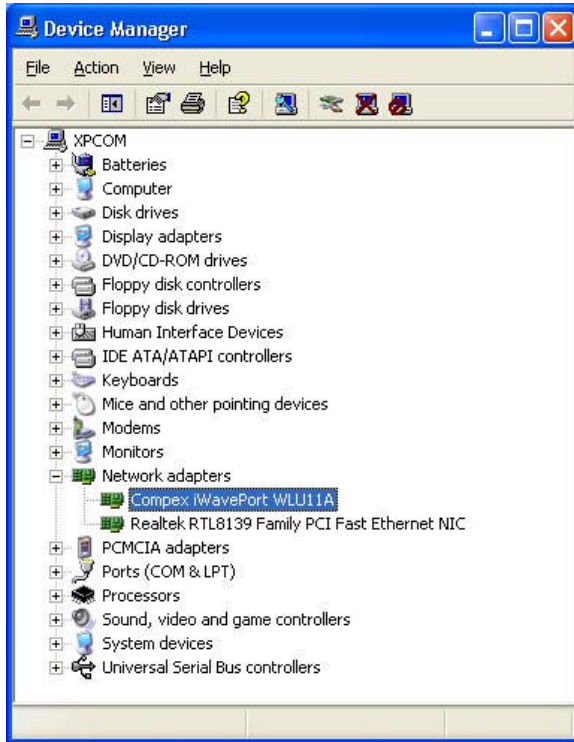


**Figure 3.2.2d Check status of WLU11A driver**

### 3.3        Configuration Utility Installation

### 3.3.1      Windows 98,98SE, ME and Windows 2000

The Configuration Utility is required to configure your client to work with your wireless network.

1.        Insert the CD into your CD-ROM drive and Windows will start Compex Product Information web page (Figure 3.3.1b). If no web is started, locate **start.html** at root directory of CD and double click it. (See Figure 3.3.1a)
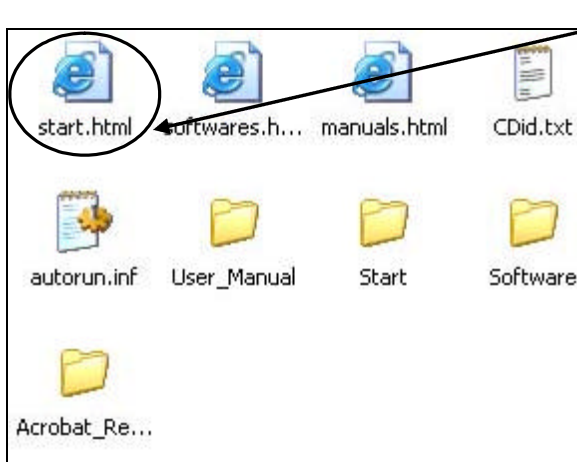


**Figure 3.3.1a Locate Setup.exe**

2.      Locate **Drivers & Utility** and click it. Locate for WLU11A **Configuration Utility** and click it. (See Figure 3.3.1b)



**Figure 3.3.1b Drivers & Utility**

3.      If you are using Windows 98/98SE/ME/2000, select **Run this program from its current location** and click **OK** and proceed to step 5. Else skip this step.(See Figure 3.3.1c)
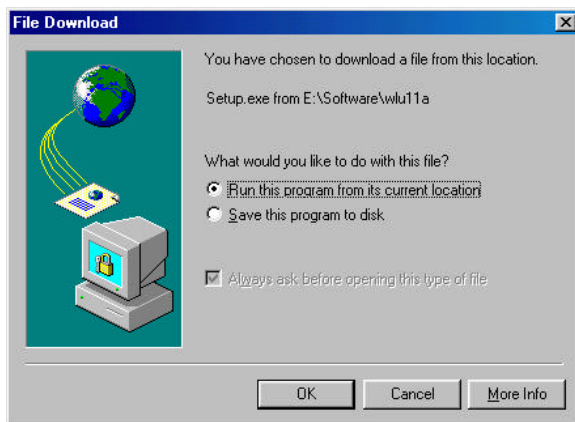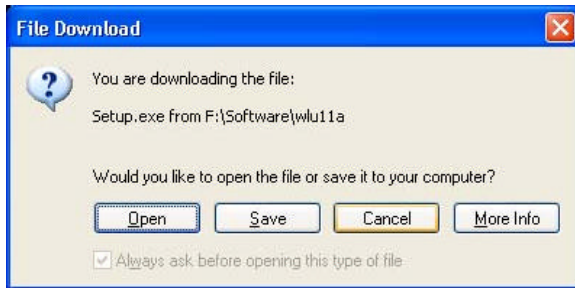


**Figure 3.3.1c Run Drivers & Utility**
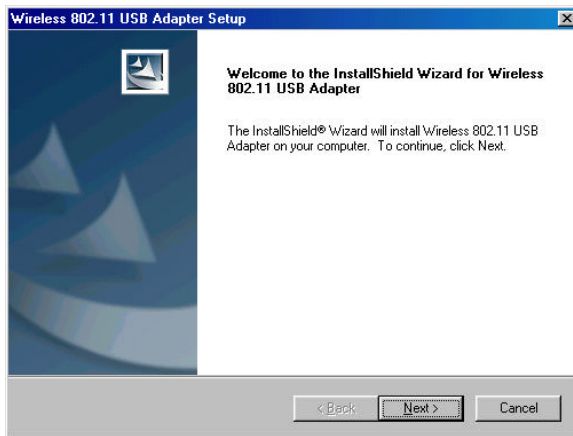
4.      If you are using Windows XP, click **Open** and proceed to step 5. Else skip
        this step. (See Figure 3.3.1d)



**Figure 3.3.1d Open Drivers & Utility**

5.      Click **Next>** in the Welcome Screen as shown in Figure 3.3.1e to continue.



**Figure 3.3.1e Setup welcome screen**

6.      Select the directory to install the utility by clicking Browse… and select the various directories. To install in the default directory just click Next>. (See Figure 3.3.1f)
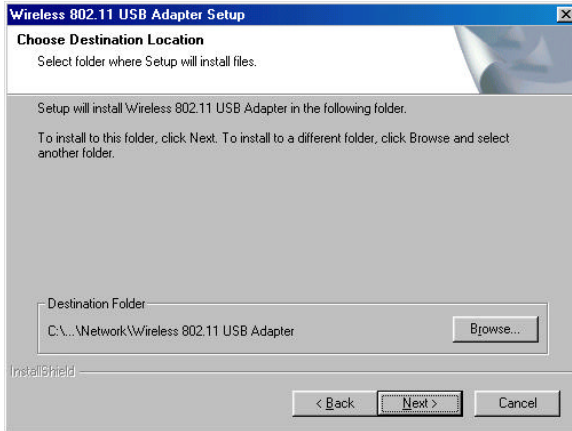


**Figure 3.3.1f Select directory to setup utility**

7.      Enter the name of the program folder for the utility. To use the default - just click Next>. (See Figure 3.3.1g)
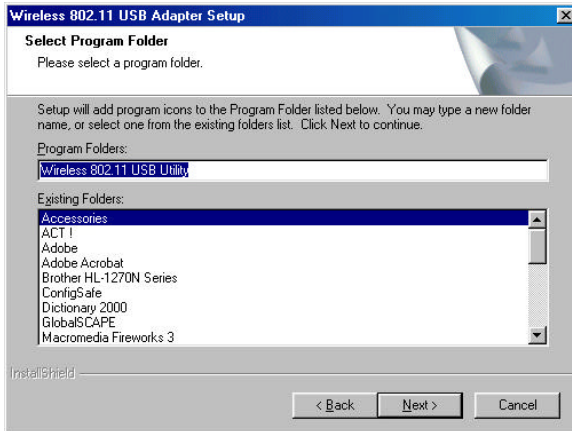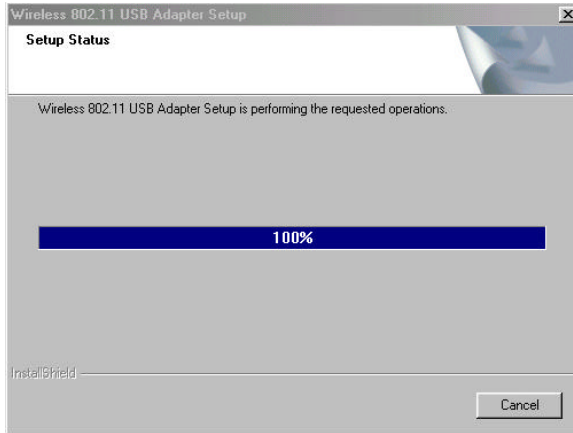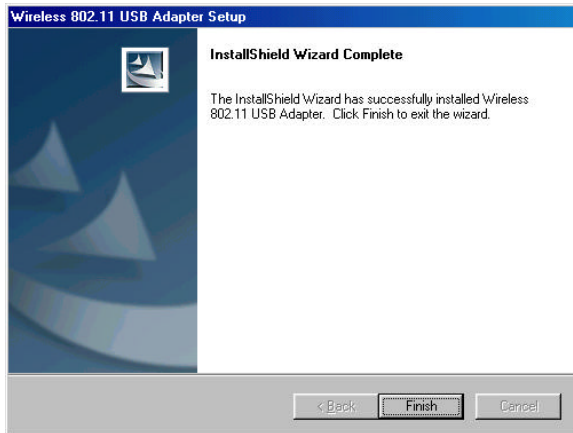


**Figure 3.3.1g Select directory to setup utility**

8.      Windows will install the files from the diskette as shown in Figure 3.3.1h.



**Figure 3.3.1h Installing files**

9.      When setup finished installing the utility as shown in Figure 3.3.1i, clicks **Finish** to complete it.



**Figure 3.3.1i Installation Completion**

10.     Once you have completed the installation, the utility will start automatically. The utility icon will appear on the system tray once it is started. (See Figure 3.3.1j)



**Figure 3.3.1j Configuration & Monitor Utility**

### 3.3.2     Windows XP Configuration

Windows XP configuration, please refer to Windows XP Wireless Connectivity Properties for Windows XP Software. (Refer page 40 for the setup).

# Chapter 4   Client Utility Configuration

The client utility you have just installed allows you to configure WLU11A easily without having to reboot your operating system.

## 4.1      Start the utility

There are various ways you can start the configuration utility in Windows 98/98SE/2000/XP

You can start the utility from the Windows Start menu, select **Programs** folder and then select **Wireless 802.11 USB Utility** folder and click **WLAN Monitor Utility**.
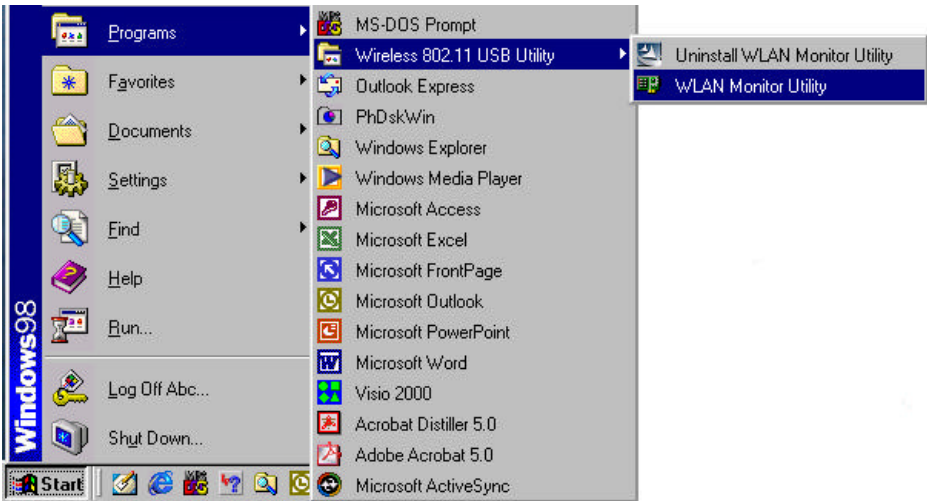


**Figure 4.1a Start Configuration & Monitor Utility**

You can also start the utility by clicking the Utility icon on the system tray as shown in Figure 3.3.1j.

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### 4.2      Architecture configuration

WLU11A can be configured to work in Infrastructure or Ad-Hoc architecture mode. For more information about Infrastructure or Ad-Hoc architecture, please refer to section 1.4.2.

To configure the Architecture do the following:

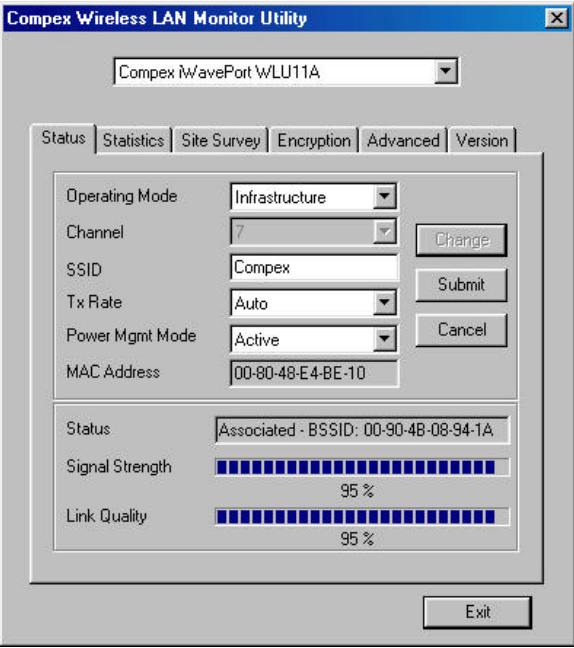1.      Start the client utility. Click **Status** menu and the following screen will be shown in Figure 4.2a.



**Figure 4.2a Start Configuration & Monitor Utility**

Before we continue the various parameters on Status menu are explained in Table 4.2 below.

| Parameters | Description |
|---|---|
| Operating mode | Select the **Ad-Hoc** or **Infrastructure** architecture for your wireless network.<br><br>*Values*<br>**Infrastructure**<br>There is an access point in the wireless network.<br><br>**Ad-Hoc**<br>There is no access point in the wireless network. |
| Channel | Select the frequency channel for your wireless network client.<br><br>*Values*<br>1 to 4 channels    France<br>1 to 11 channels   United States & Canada (FCC)<br>1 to 13 channels   European, except France (ETSI) |
| SSID | SSID is the acronym for Service Set Identifier. It is a unique name that is shared among all wireless hosts. Key in an Identification to specify the wireless network you want to access. |
| Tx Rate | Set the transfer rate for the wireless interface. If the transfer rate for your wireless interface cannot be sustained, the link will be dropped. If you set the **Tx Rate** to **Auto,** WLU11A will adjust the transfer rate depending on the Link distance.<br><br>*Values*<br>1 Mbps, 2 Mbps, 5.5 Mbps, 11 Mbps, Auto. |
| Power Mgmt Mode | To enable power saving for WLU11A select **Power Save** else select **Active**.<br><br>*Values*<br>Power Save, Active<br><br>**NOTE** Power Save mode can only work in Infrastructure mode. |

**Table 4.2 Status Menu Parameters**

| Parameters | Description |
|---|---|
| MAC Address | Shows the MAC address of your WLU11A. |
| Status | Shows the various status of wireless connection<br><br>*Values*<br>**Changing configuration…**<br>Utility is updating information to WLU11A.<br><br>**Scanning…**<br>WLU11A is scanning for any available wireless network.<br><br>**OK…**<br>WLU11A detects other wireless clients in Ad-Hoc mode.<br><br>**Associated – BSSID:…**<br>WLU11A is connected to an Access Point in Infrastructure mode. The BSSID is shown in HEX numbers. |
| Signal Strength | Indicates the signal strength of data packets from the access point in infrastructure mode.<br><br>*Values*<br>0 to 100% |
| Link Quality | Indicates the signal quality of the link to other wireless hosts.<br><br>*Values*<br>0 to 100% |

**Table 4.2 Status Menu Parameters (Continue)**

### 4.2.1   Infrastructure Architecture Configuration

1.   Start the client utility. Click **Status** menu and then click Change and configure the following parameters.

**Operating Mode:**
Infrastructure
**SSID:**
Compex
**Tx Rate:**
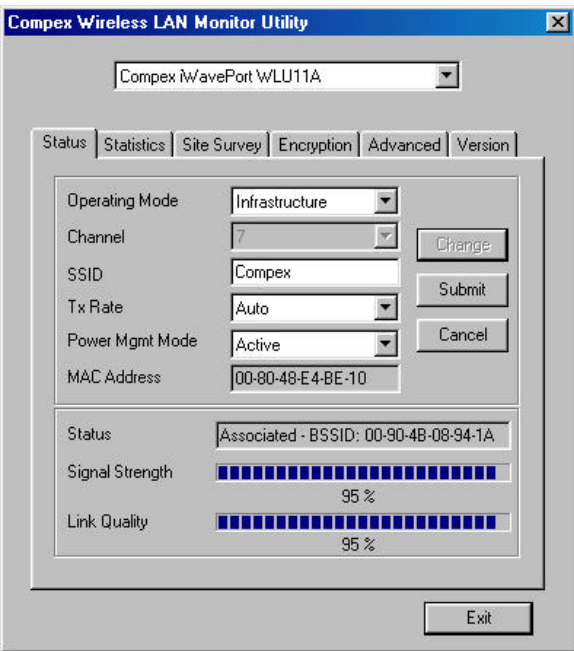Auto
**Power Mgmt Mode:**
Active



**Figure 4.2.1a Example of Infrastructure Mode**

2.   Click **Submit** and WLU11A will search for any access point.

3.   Click **Exit** to close the program.

| NOTE | **NOTE**<br>All the information entered must be the same value as your access point in order for WLU11A to connect to it. |
|---|---|

### 4.2.2    Ad-Hoc Architecture Configuration

1. Start the client utility. Click **Status** menu and then click **Change** and configure the following parameters.

**Operating Mode:**
Ad-Hoc
**Channel:**
3
**SSID:**
Compex
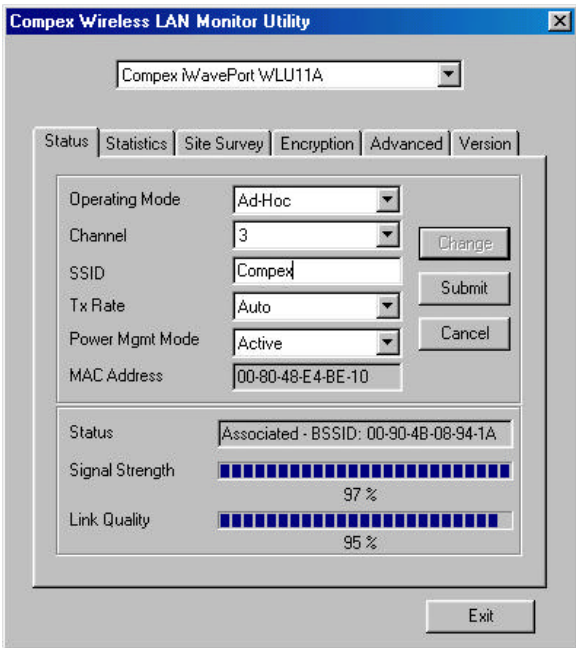**Tx Rate:**
Auto
**Power Mgmt Mode:**
Active



**Figure 4.2.2a Example of Ad-**

**Hoc Mode**

2. Click **Submit** and WLU11A will search for any wireless clients.

3. Click **Exit** to close the program.

| NOTE | **NOTE** All the information entered must be the same value as your other wireless clients in order for WLU11A to connect to them. |
|------|------|

### 4.3 Statistics

After you have configured the desired architecture, WLU11A can show you the statistics for transmission. To watch the statistics, follow the procedures below:

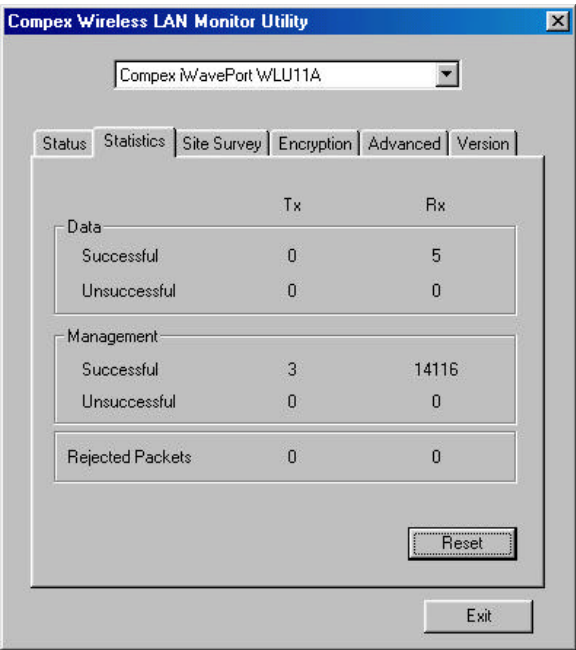1.  Start the client utility. Click **Statistics** menu and the following Figure 4.3a will be shown.



**Figure 4.3a Statistics menu**

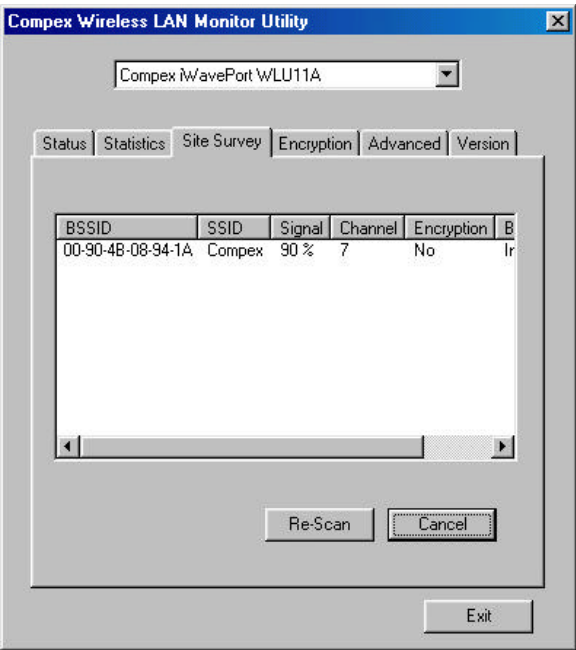Table 4.3 explains the various parameters on the Statistics Menu.

| Parameters | Description |
|---|---|
| **Data**<br>Successful Tx/Rx | The number of data packets successfully transmitted or received. |
| Unsuccessful Tx/Rx | The number of data packets unsuccessfully transmitted or received. |
| **Management**<br>Successful Tx/Rx | The number of management packets successfully transmitted or received. |
| Unsuccessful Tx/Rx | The number of management packets unsuccessfully transmitted or received. |
| Rejected packets TX/RX | Number of rejected transmitted/received packets |

**Table 4.3 Statistic Menu Parameters**

### 4.4      Site Survey

The Site Survey shows the wireless hosts that are detected by WLU11A.
To check the wireless hosts around WLU11A do the following.

1.       Start the client utility. Click **Site Survey** menu and the following Figure 4.4a
         will be shown.



**Figure 4.4a Site Survey Menu**

2.       To scan the wireless hosts click **Re-Scan**. During the scanning, you can end
         it by clicking **Cancel**.

Table 4.4 explains the various parameters on the Site Survey Menu.
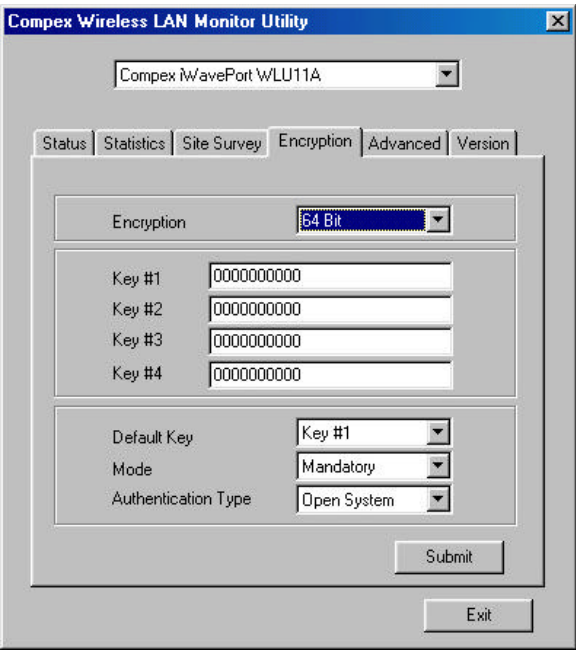
| Parameters | Description |
|---|---|
| BSSID | A hex number that identifies the wireless host. |
| SSID | SSID is the acronym for Service Set Identifier. It is a unique name that is shared among all wireless hosts in the same wireless network. |
| Signal | Shows the signal strength to the device. |
| Channel | The frequency channel that is set on the respective wireless host. |
| Encryption | Shows whether Encryption is turned on or off on the respective wireless host. |
| BSS | BSS is the acronym for Basic Service Set. It indicates the mode (Infrastructure or Ad-Hoc) this BSSID is working in. |

**Table 4.4 Site Survey Menu Parameters**

### 4.5      Security

As air is the medium of transmission, any users with a wireless enabled computer can eardrop the data transmitted easily. For protection of your data from unauthorized users, you need to encrypt the data before they are transmitted. WLU11A offers two types of encryption – 64-bit WEP and 128-bit WEP. To secure your data do the following:

1.       Start the client utility. Click **Encryption** menu and select **64 bit** under Encryption parameters and the following Figure 4.5a will be shown.



**Figure 4.5a Encryption Menu**

Table 4.5 explains the various parameters on the Encryption Menu.

| Parameters | Description |
| --- | --- |
| Encryption | Select Disabled, 64 bit or 128 bit WEP encryption.<br><br>*Values*<br>**Disabled**<br>Encryption is disabled.<br><br>**64 bit**:<br>You need to key in 10 Hex numbers for your secret key to encrypt the data transmitted. Each key needs to have 10 Hex numbers.<br><br>**128 bit**<br>You need to key in 26 Hex numbers for your secret key to encrypt the data transmitted. Each key needs to have 26 Hex numbers. |
| KEY#1<br>KEY#2<br>KEY#3<br>KEY#4 | Enter your Encryption Key here.<br><br>**NOTE**<br>NOTE<br>You can enter up to 4 Encryption Key. However, only 1 key will be used at a time. |
| Default Key | Select one of the four keys to use for encryption. |
| Mode | Select the mode for the encryption key<br><br>*Values*<br>**Optional**<br>Encryption key does not depend on the Encryption key selected.<br><br>**Mandatory**<br>Encryption also depends on the Encryption key selected. |
| Authentication Type | Select how the wireless client authenticate with the access point.<br><br>*Values*<br>**Open system**<br>Wireless client does not need to share the same Encryption key to authenticate with access point.<br><br>**Shared Key**<br>Wireless client need to share the same Encryption key to authenticate with access point. |

**Table 4.5 Site Survey Menu Parameters**

### 4.5.1    Ad-Hoc 64-bit Encryption Configuration

1.    Start the client utility. Click **Encryption** menu and configure the following parameters.

**Encryption**
64 bit
**Key #1**
0123456789
**Key #2**
ABCDEF0000
**Key #3**
0000000000
**Key #4**
0000000000
**Default Key**
Key #1
**Mode**
Mandatory
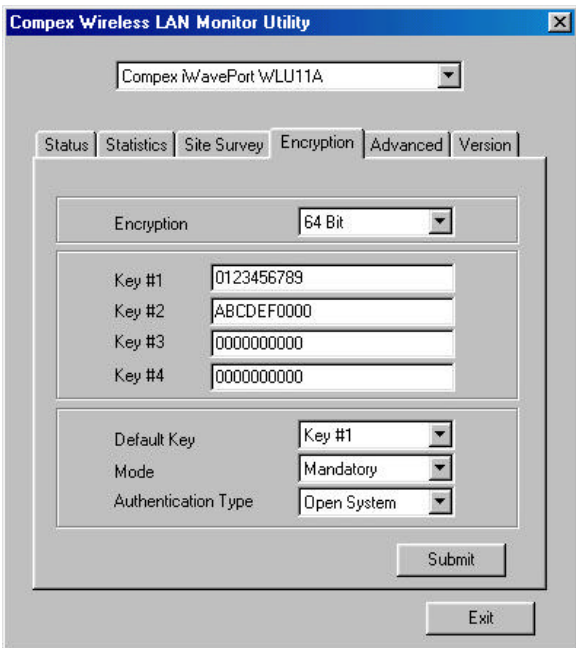**Authentication Type**
Open System



**Figure 4.5.1a 64-bit Encryption Configuration**

2.    Click **Submit** for changes to take effect.

| NOTE | **NOTE**<br>All the information entered must be the same value as that of your wireless network in order for WLU11A to connect to it. |
|------|---------|

### 4.6      Advanced configuration

The Advanced configuration menu is for users who are familiar with the IEEE802.11 standard. Preamble type, Fragmentation Threshold and RTS/CTS Threshold can be set here. To set these setting do the following:

1.      Start the client utility. Click **Advanced** menu and the following Figure 4.6a will be shown.
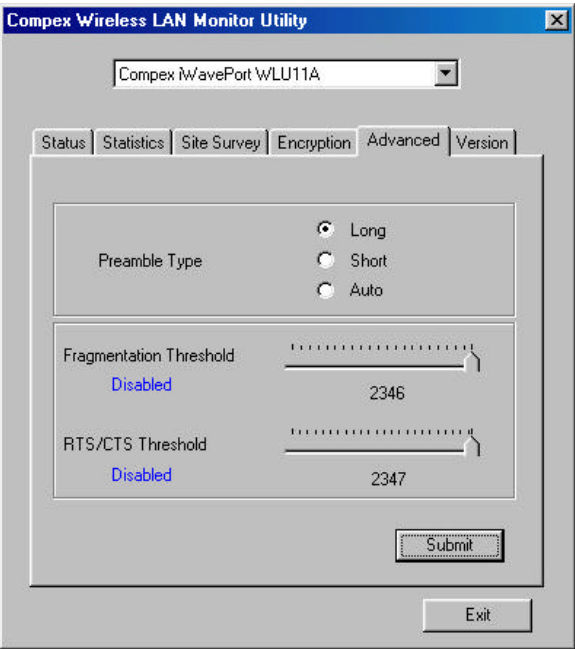


**Figure 4.6a Advanced Menu**

Table 4.6 explains the various parameters on the Advanced Menu.

| Parameters | Description |
|---|---|
| Preamble Type | Select Long or Short Preamble for the length of the preamble<br><br>*Values*<br>**Long**<br>144 bits.<br><br>**Short**<br>72 bits<br><br>**Auto**<br>Automatically select Long or Short for Preamble type. |
| Fragmentation Threshold | Set the maximum size the RF data packet will be split up for transmission.<br><br>*Values*<br>256 to 2345<br>2346 to disable. |
| RTS/CTS Threshold | Set the size of the Request to Send (RTS) and Clear to Send (CTS) packets.<br><br>*Values*<br>1 to 2346<br>2347 to disable. |

**Table 4.6 Advanced Menu Parameters**

## 4.7      Version checking

Check the version of your Driver, firmware and Application here. You can download the newer version on Compex web site at www.compex.com.sg or www.cpx.com. To check the version of your WLU11A do the following:

1.       Start the client utility. Click **Version** menu and the following Figure 4.7a will be shown.
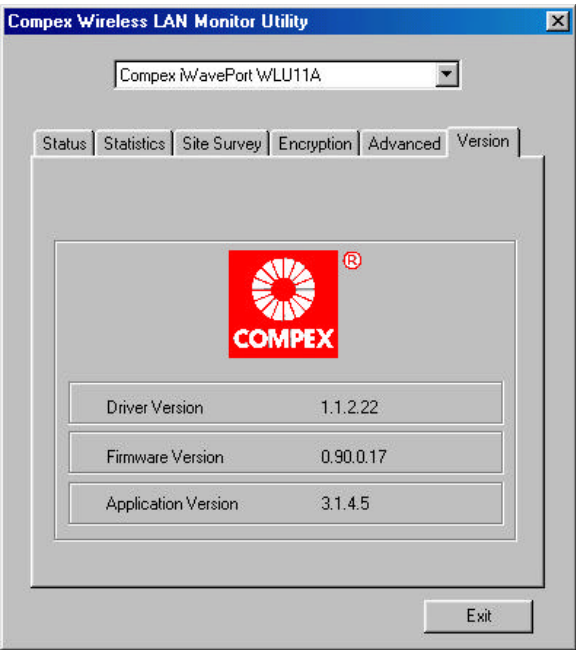


**Figure 4.7a Version Menu**

Table 4.7b explains the various parameters on the Version Menu.

| Parameters | Description |
| --- | --- |
| Driver Version | The version of the driver used. |
| Firmware Version | The version of the firmware in WLU11A. |
| Application Version | The version of the Client Utility. |

**Table 4.7b Version Menu Parameters**

## Chapter 5   Un-installation for Utility and drivers

This chapter provides instructions for you to un-install the drivers and utility.

### 5.1      To Un-install Utility

If you want to install a new client utility, you need to un-install the present client utility first.

1.        Start the **Uninstall**; Select **Programs** folder and then select **Wireless 802.11 USB Utility** folder and click **Uninstall**. Click **OK** to continue.
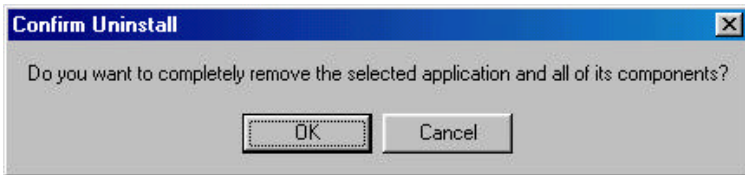


**Figure 5.1a InstallShield Wizard**

2.        Once the following screen (Figure 6.1b) is shown, the un-installation process is completed. Click **Finish** to close it.
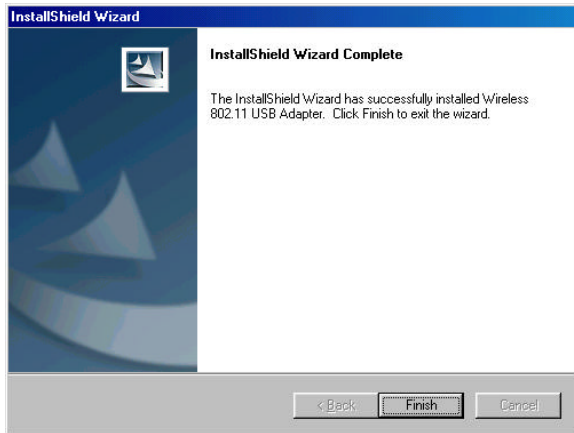


**Figure 5.1b Maintenance Complete**

## 5.2      Drivers Un-Installation

If the drivers are corrupted, you can remove the drivers by following the procedures below.

1.       Search for the Un98wlua.bat file in the CD-ROM under the directory software/wlu11a/drivers and Run it.
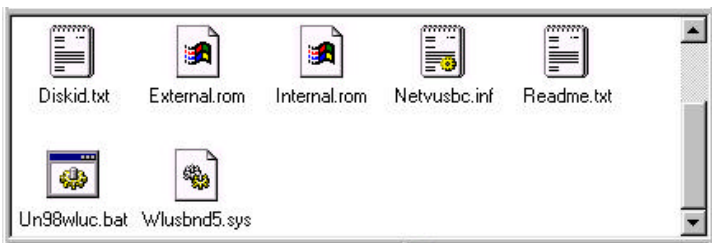


**Figure 5.2a Un98wlua.bat**

| NOTE | **NOTE**<br>This batch file only works for Windows 98/98SE and ME. |
| --- | --- |

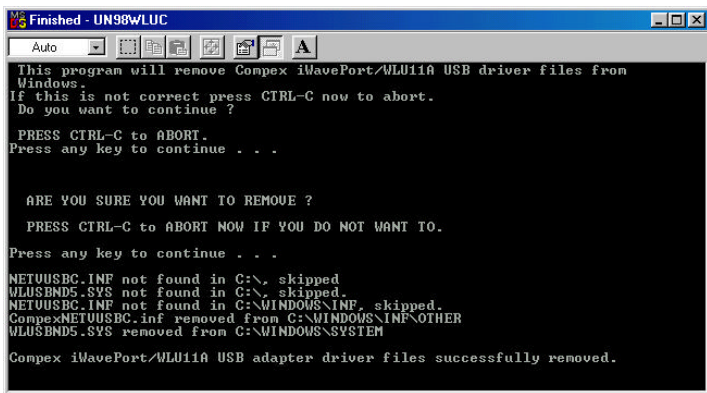2. A Dos batch will run. Press Enter key twice to uninstalled the drivers. Figure 6.2b shows the results of the un-installation.



**Figure 6.2b Uninstallation successful**

# Chapter 6   Windows XP Wireless Connectivity

Windows XP comes with the support for wireless Network. You can use Windows XP Wireless Connectivity to connect your WLU11A to your wireless network.

**6.1     Start Windows XP Wireless Connection Properties Menu**

1.      Once you have installed the drivers for WLU11A, Windows XP will detect WLU11A and a **Wireless Network Connection** icon will be seen on the system tray. Click it.(See Figure 6.1a)
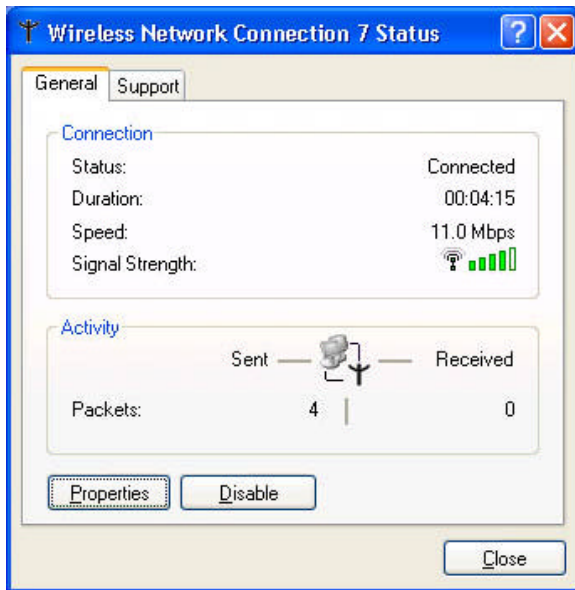


**Figure 6.1a Wireless Network Connection icon**

2.      If wireless client is not connected to any wireless network Figure 6.1b will be shown else Figure 6.1c will be shown.
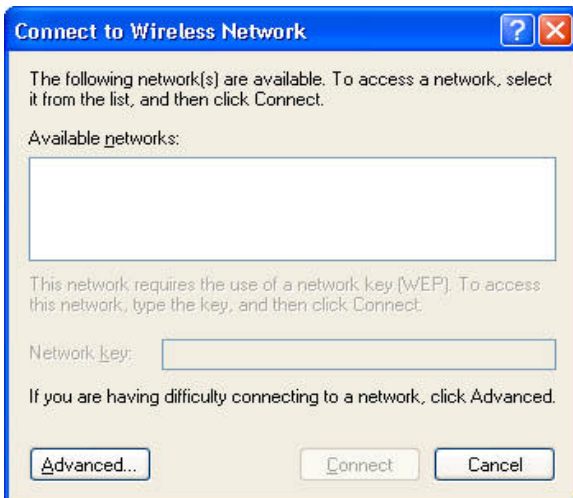


**Figure 6.1b Connect to Wireless Network**

**Figure 6.1c Wireless Network Connection Status**

3.      Click Advanced if Figure 6.1b is started else click Properties if Figure 6.1c is started. **Wireless Network Connection Properties – Wireless Networks** will be started as shown in Figure 6.1d.
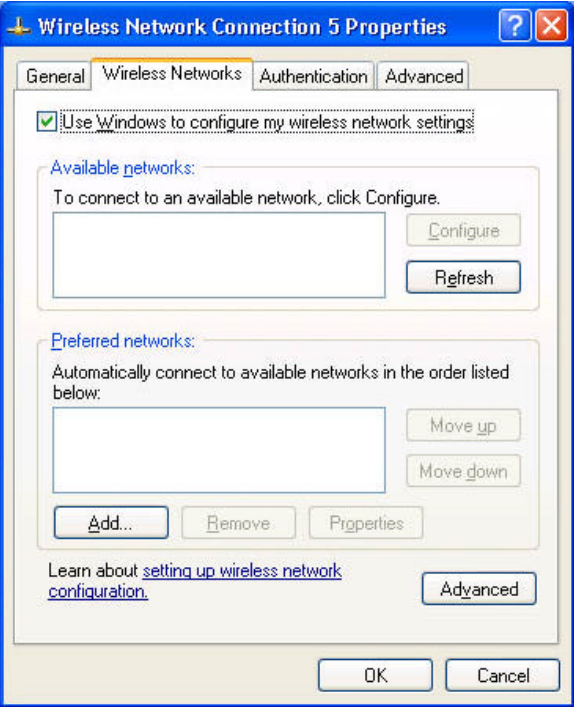
**Figure 6.1d Wireless Network Connection Properties – Wireless Networks**

## 6.2      Windows XP Wireless Connectivity Properties Menu

The properties of the **Wireless Network Connection Properties** Menu will be explained in this section. Figure 6.2a shows the hierarchy of the other menus. The various buttons will bring you to the various menus as shown in Figure 6.2a.
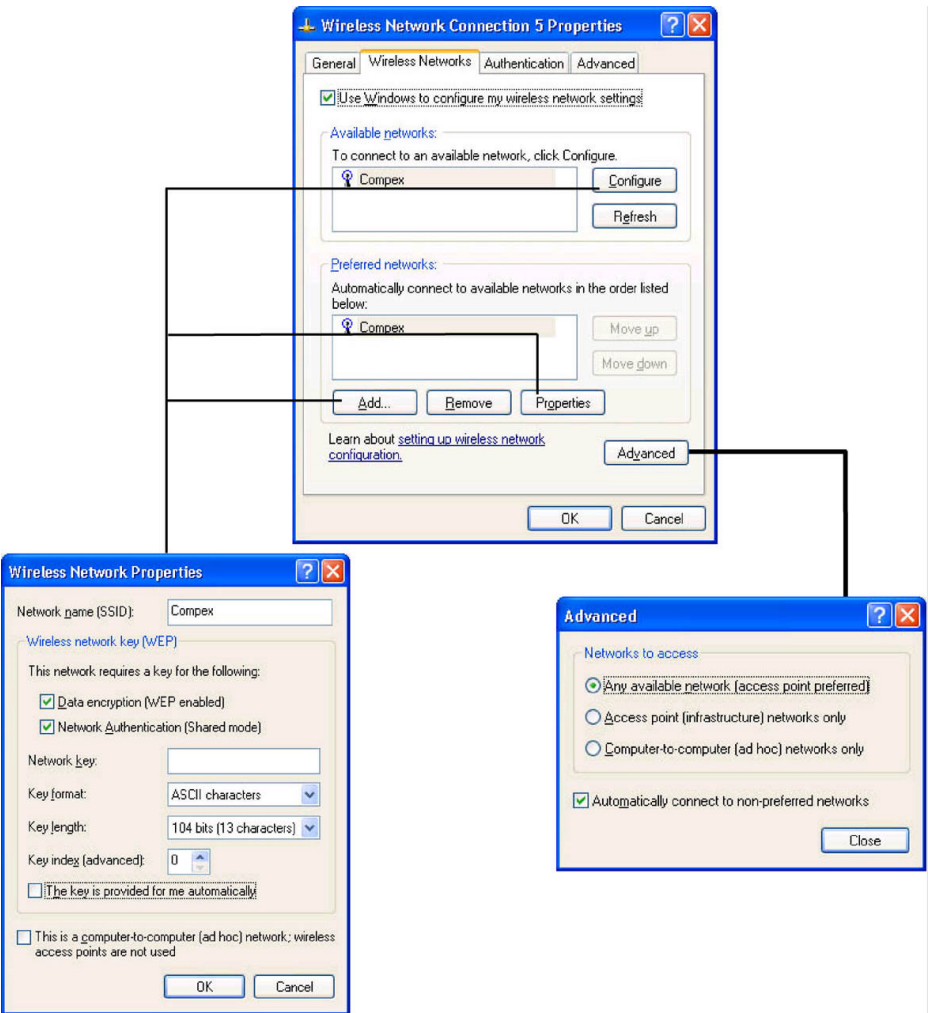


**Figure 6.2a Hierarchy of Various Other Menus**

Table 6.2a explains the various parameters on the **Wireless Network Connection Properties** Menu**.**

| Parameters | Description |
|---|---|
| Use Windows to configure my wireless network settings | Specify whether to use Windows wireless Connection or WLU11A utility to configure WLU11A. |
| Available Networks | Display the wireless network detected by WLU11A. |
| Preferred Networks | Configure the priority of wireless network to connect to WLU11A. |

**Table 6.2a Wireless Network Connection Properties Menu Parameters**

Table 6.2b explains the various parameters on the **Advanced** Menu.

| Parameters | Description |
|---|---|
| Networks to access | Specify the priority on the types of wireless network the wireless client is to be connected. |
| Automatically connect to non-preferred networks | Specify whether to connect to wireless network that are not specified in the preferred networks. |

**Table 6.2b Advanced Menu Parameters**

Table 6.2c explains the various parameters on the **Wireless Network Properties** Menu.

| Parameters | Description |
|---|---|
| Network name(SSID) | SSID is the acronym for Service Set Identifier. It is a unique name that is shared among all wireless hosts in the same wireless network. |
| Data encryption (WEP enabled) | Specify whether to use Encryption when connecting to wireless network. |
| Network Authentication (Shared mode) | Specify whether wireless client use Open system or Shared Mode to authenticate to an Access Point.<br><br>**Open system**<br>Wireless client does not need to share the same Encryption key to authenticate with access point.<br><br>**Shared Key**<br>Wireless client need to share the same Encryption key to authenticate with access point. |
| Network key | Enter your Encryption Key here. |
| Key format | The format of the encryption key.<br><br>*Values*<br>**ASCII characters**<br><br>**Hexadecimal digits** |
| Key Length | Specify whether to use 64-bit or 128-bit encryption. |
| Key index | Specify the location of the of the Network key. |
| The key is provided for me automatically | Specify whether to use the Encryption key is automatically provided by the preferred network. |
| This is a computer-to-computer (ad hoc) network; wireless access points are not used | Specify whether to set this network for ad-hoc or Infrastructure mode.<br><br>**Infrastructure**<br>There is an access point in the wireless network.<br><br>**Ad-Hoc**<br>There is no access point in the wireless network. |

**Table 6.2c Wireless Network Connection Menu Parameters**

**6.3      Infrastructure Mode With 64-bit Encryption Configuration**

1.       Start **Windows XP Wireless Connectivity Properties** Menu, click **Add** and
         enter the following information.

**Network name(SSID):**
Compex
**Data encryption (WEP enabled):**
☑
**Network    Authentication    (Shared
mode):**
☐
**Network key:**
1122334455
**Key format:**
Hexadecimal digits
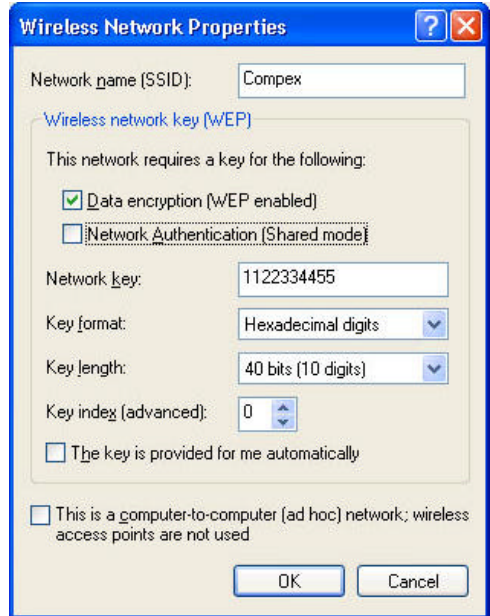**Key length:**
40 bits(10 digits)
**Key index (advanced):**
0
**The    key    is    provided    for    me
automatically:**
☐

**This is a computer-to-computer (ad hoc)
network; wireless access points are not used**
☐



2.       Click **OK** and then click **Refresh** to let WLU11A search for your preferred
         wireless network.

| NOTE | **NOTE**<br>All the information entered must be the same value as your access point in order for WLU11A to connect to it. |
|------|------|

### 6.4    Ad Hoc Mode With 128-bit Encryption Configuration

1.    Start **Windows XP Wireless Connectivity Properties** Menu, click **Add** and enter the following information.

**Network name(SSID):**
Compex
**Data encryption (WEP enabled):**
☑
**Network Authentication (Shared mode):**
☐
**Network key:**
11223344556677889900aabbcc
**Key format:**
Hexadecimal digits
**Key length:**
104 bits(26 digits)
**Key index (advanced):**
0
**The key is provided for me automatically:**
☐
**This is a computer-to-computer (ad hoc) network; wireless access points are not used**
☑

2.    Click **OK** and then click **Refresh** to let WLU11A search for your preferred wireless network.

| NOTE | **NOTE** |
|------|----------|
|      | All the information entered must be the same value as your other wireless clients in order for WLU11A to connect to them. |

# Chapter 7   Troubleshooting

This chapter explains how to perform some basic troubleshooting when you encounter problems while installing the Compex WLU11A.

### 7.1       Encounter IP Address Conflicts

In the process of configuring the WLU11A in network with a DHCP server, you may encounter a conflict of IP address as shown.
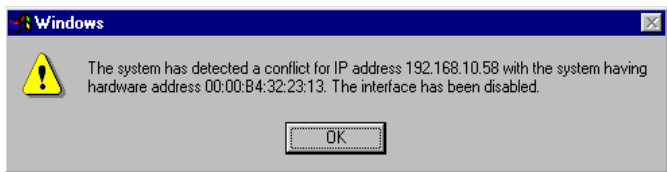


**Figure 7.1a IP conflict**

### 7.1.1    For Windows 98/98SE/ME

In Windows 95/98, you can try the following to release your IP address and renew a new IP address:

1.       Click **Start**, point to **Run**, and enter in **winipcfg**. The Winipcfg screen will then appear as shown. Click **Release All button**. The Winipcfg will then release your current TCP/IP configuration to 0.0.0.0.
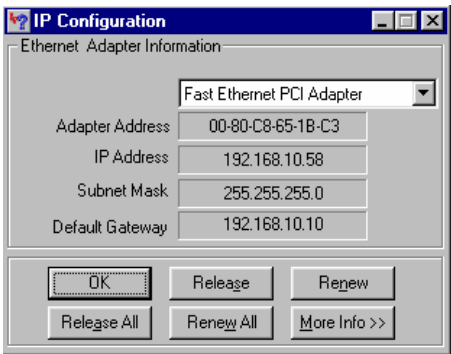


**Figure 7.1.1a Winipcfg program**
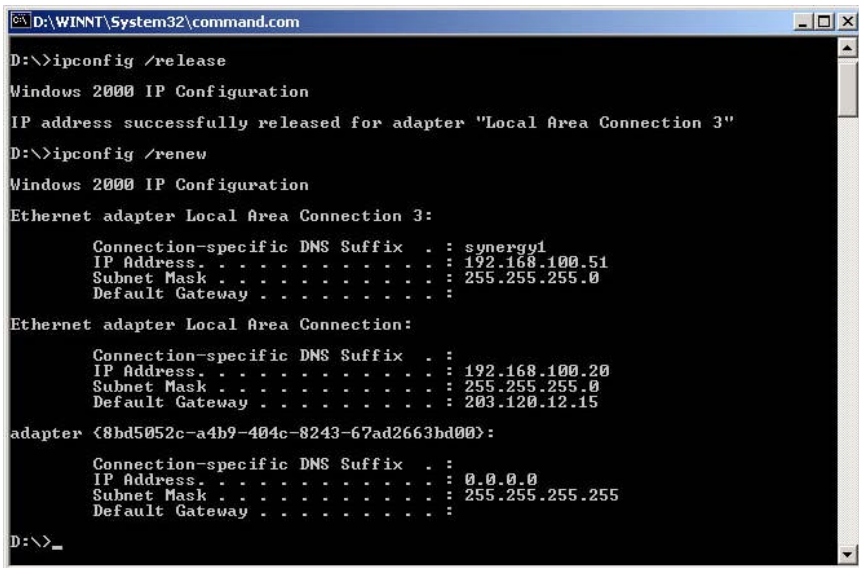
2.       Click **OK**.

3.        And Restart your computer.

### 7.1.2    For Windows 2000/XP

Do the following

1.        At the **Command Prompt**, type **ipconfig /release** and press [Enter].
2.        Next, type **ipconfig /renew** and press [Enter].(See Figure 7.12a)



**Figure 7.1.2a ipconfig command**

# Chapter 8   Appendix

This chapter provides some additional information that may be useful to you when setting up the WLU11A. Basic Networking configurations for network adapters are covered here. The configurations here assumed that a DHCP server exist in your network.

### 8.1   Adding TCP/IP network protocol for Windows 98/98SE/ME

1.   From the Windows 98/98SE/ME Start Button, select Settings, and then Control Panel.
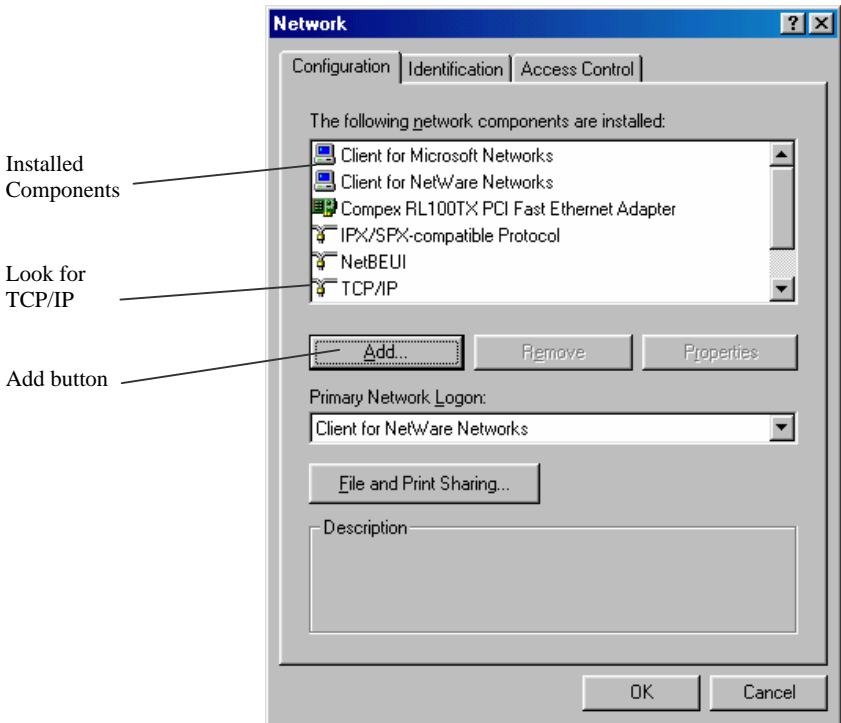
2.   Double-click on the Network icon and a Network screen will appear as:
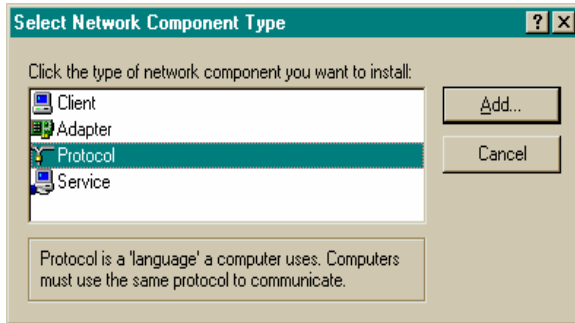


**Figure 8.1a Network Configuration**

3.     Check your list of Network Components in the Network window Configuration tab. If TCP/IP is not installed, select Add button to start the installation

4.     Select Protocol and click Add button.



**Figure 8.1b Select Network Component Type**

5.     Select Microsoft and TCP/IP in Manufacturers and Network Protocols columns respectively. Click OK. You may need your Windows CD to complete the installation.
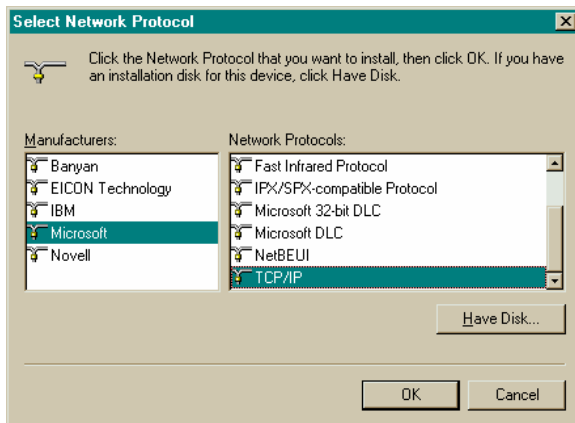


**Figure 8.1c Select Network Protocol**

6.     After TCP/IP is installed, go back to the Network screen and select TCP/IP in the list of Network Components.

7.    Click Properties, and check the settings in each of the TCP/IP Properties window.

TCP/IP    Properties
Tabs (IP address Tab
shown)
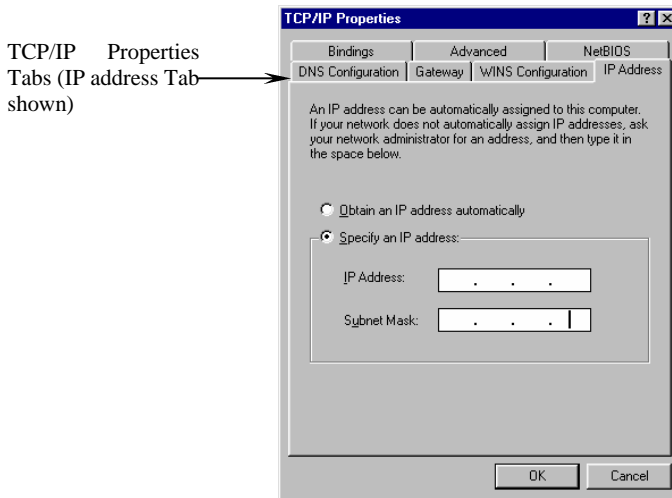


**Figure 8.1d IP Address Configuration**

Now that you have your TCP/IP installed, you may proceed to section **7.2 to configure the TCP/IP.**

**8.2     Windows 98/98SE/ME Configuration of TCP/IP network protocol for DHCP server**

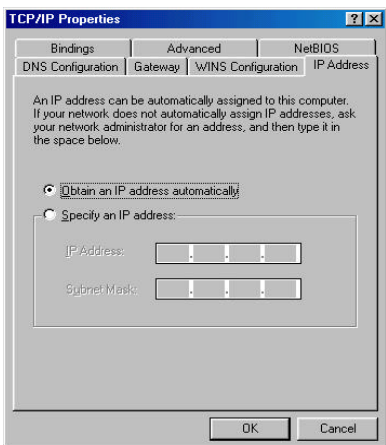1.     Click on IP Address Tab and select Obtain an IP address automatically.



**Figure 8.2a IP Address Configuration**

2.     Click on Bindings Tab and select **Client for Microsoft Networks** and **File and printer sharing** for Microsoft Networks, and click OK
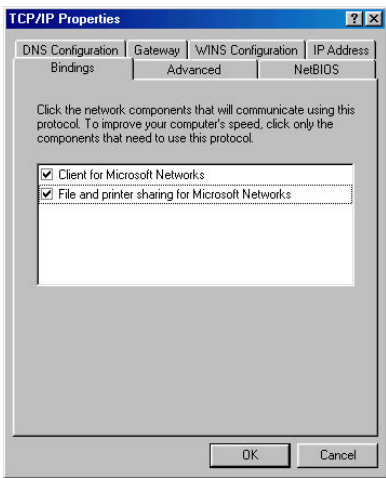


**Figure 8.2b  Binding**

3.      Click the Gateway and make sure all fields are blank.
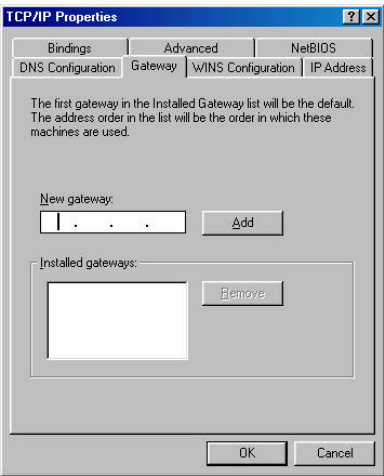


**Figure 8.2c  Gateway**

4.      Click on DNS Configuration Tab and select Disable DNS
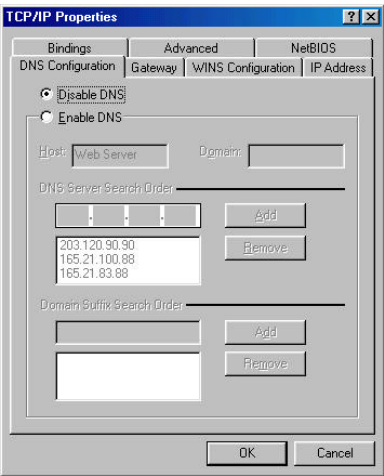


**Figure 8.2c  Gateway**

5.        Click OK to accept these settings and reboot the PC.


**8.3        Windows XP Configuration of TCP/IP network protocol for DHCP server**

For Windows XP, you do not need to install the TCP/IP protocol as it is installed when you install a network card. Therefore only the configuration for TCP/IP is shown.

1.        From the Windows XP Start menu  - click Control Panel, then click **Network and Internet Connections**. Then click Network Connections to open Figure 8.3a below.
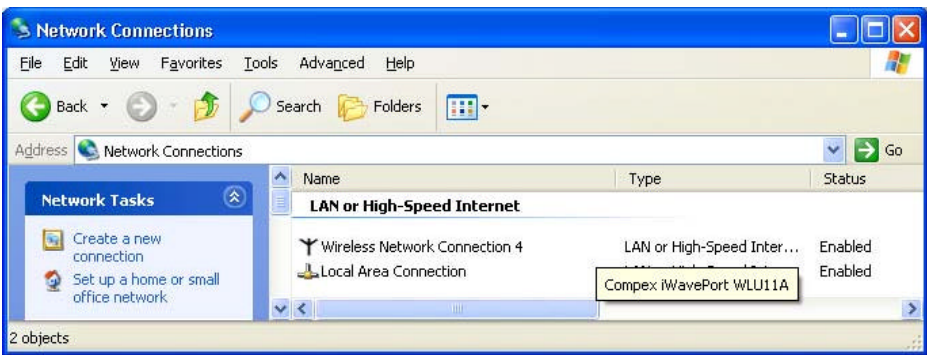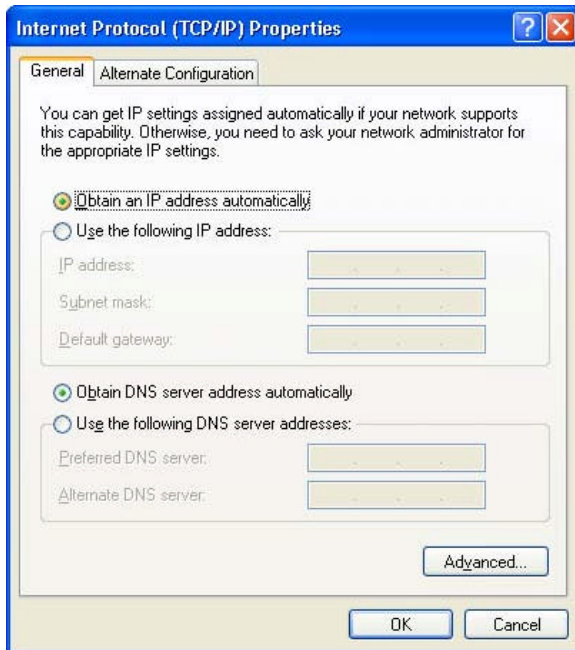


**Figure 8.3a  Network Connections**

2.     Right click the network connections you want to edit and click **Properties**. Figure 8.3b will be opened as shown.



**Figure 8.3b   WLU11A Network Connection**

3.      Highlight the Internet Protocol (TCP/IP) item and click **Properties**. Figure
         8.3c will be shown.



**Figure 8.3c  IP Address Configuration**

4.      Select "**Obtain an IP address automatically**" and click **OK**.

To be able to browse the Net, the PC usually runs a browser. If you have not installed
any, install one now. The most popular browsers are Microsoft Internet Explorer and
Netscape. Start the browser and the NP11A will connect these PCs to the Internet.

# NOTES